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THE BISMYA TEMPLE.

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The long, low, extensive group of mounds at Bismya is divided into two unequal parts by a valley, the bed of which is little higher than the surrounding desert. Toward its eastern end the valley divides itself, sending branches about a small, square, pyramidal hill, and, again uniting, disappears in the desert. It marks the bed of the ancient canal, probably the Shatt en-Nil, and the square mound, eleven meters in height and about ninety meters in the circumference of its base, as its shape suggested before excavations in it were opened, conceals the ruin of the staged ziggurat. The temple at Bismya was situated upon an island in the canal. The level surface of the summit of the mound has been employed as a modern cemetery; among its graves, and upon the windward or eastern side, changeable sand drifts have accumulated. The sides of the hill sloped in its steepest places at an angle of forty degrees; the corners, as usual, are turned to the cardinal points.

The excavations at Bismya began at the temple, and were continued most of the time for five consecutive months, with at least part of the workmen, or with a force varying from sixty to one hundred and twenty. The summit and sides of the hill were cleared of the drifting sand; the great trenches at the base of the ziggurat were dug out; the platforms of the various temples, the chambers whose walls could still be traced, and other constructions were emptied of the rubbish which had accumulated in them; tunnels were dug from the three sides of the ziggurat to its center, and five shafts were sunk to the level of the desert, or to the virgin sand which showed no traces of occupation. One of the shafts, twelve meters in depth, was dug from the center of the ziggurat, another from its southeast side, and three followed the vertical drains of the temple inclosure.

On account of the unfortunate robbery of the engineer by Arabs, the notes of the survey of the temple were lost. Approximate dimensions only can be given until the survey of Mr. Persons, the present engineer, is at hand.

The summit of the hill was identical with the base of the ziggurat of Dungi, king of Ur, 3750 B. C., as about forty bricks inscribed with his name evidenced. A casing of burned bricks, about one meter in width, inclosed the tower, while its interior was of dirt; or, if it were libbin or unbaked clay bricks, as the interior of the ziggurat at Mugheir, it had so disintegrated as to be indistinguishable from clay. The bricks of the casing were square, measuring $31 \times 31 \times 6.5$ centimeters, and of a light-yellow color. The inscribed bricks averaged about one to twenty of the uninscribed, and were laid, inscription downward, at intervals of no regular order. The cement employed was well-mixed clay—not the bitumen of the structures beneath it, nor the lime used at a later date. The inscription, which was carefully written by hand, and not stamped—thus accounting for the scarcity of the inscribed bricks—contained nine lines of writing in the style of the cuneiform peculiar to the third millenium B. C.; and simply stated that Dungi, king of Ur and of Kengi, had dedicated the platform to his goddess Nin-har-Sag. How many stages the ziggurat originally contained it is impossible to learn; the small amount of the rubbish which had accumulated about its sides indicated that it never possessed more than two or three stages, or that its bricks had been removed to provide material for other constructions. At the south corner a heap of bricks, about four meters in length, lay as they had fallen outward from the walls.

A flight of steps, from which the burned bricks had been removed, ran half the length of the southwest side, and led from a wide, brick-paved platform to the summit of the first stage of the ziggurat. A drain of round tiles, each about twenty centimeters in diameter and a meter in length, ran beneath the paving of the platform to a vertical drain of an earlier period. Apart from the traces of the mud brick walls of the chambers upon the northwest side, nothing else of the temple of Dungi remained.

The brick inscriptions, which presented no clue to the name of the temple or city, an inscribed brick of Gimil Sin, a later king of the same dynasty of Ur, and a single inscribed tablet which was so quickly covered with an incrustation of saltpeter that it was illegible, were the only inscribed antiquities found in Dungi's temple. We had learned only that we were dealing with ruins of the third millennium B. C., and that Nin-har-Sag, as Belit, in the early days, was called, was worshiped there.

It seems that the Bismya temple has long provided material for the builders. Just beneath the stage tower of Dungi were a few large, square, burned bricks of Sargon, measuring $46 \times 46 \times 9$ centimeters. Although none of them were inscribed, they were recognizable by their peculiar size. An inscription upon gold, of his son, Naram Sin, was found among the bricks, and from other parts of the ruins, contract tablets and seal impressions, bearing the name of Sargon, supported the supposition. However, the bricks were so scattered and so few in number that no plan of his temple was possible. It appears to have been slightly smaller than the one above it.

Less than a meter below the bricks of Dungi, and below the bricks of Sargon, appeared traces of a series of royal builders whose names and dates are still unknown. From the shapes of the bricks and from the markings upon them, it is evident that at least fifteen rulers added their repairs to an earlier temple of plano-convex bricks. The bricks are long and thin, with the average dimensions of $25 \times 22 \times 5$ centimeters; the upper face is slightly convex, and marked with grooves formed by drawing the fingers across the clay before it was baked. Some of the grooves ran lengthwise, others diagonally or crosswise, and varied in number from one to five; if the grooves were crosswise, the number was repeated from the opposite corners. As the examination of the various strata of the temple revealed, the grooves were the forerunners of the brick inscription, and their number and position were equivalent to the names of the kings.

This long series of rulers seems to have added but little to the temple. Repairs with bricks of four grooves appeared on the northeast side, at a level slightly lower than the platform of Dungi. The three-grooved bricks appeared most frequently, and were employed on the same level as the four-grooved bricks, but in different parts of the temple. A platform upon which rested a large, uninscribed, marble door-socket on the southeast side, later floors of two peculiar constructions at the south corner, which I believe to be ancient crematoria, and a drain at the edge of the northwest side, represent the chief repairs of the ruler who employed these bricks. At a considerably lower level, and chiefly northeast of the ziggurat, were repairs in bricks of two grooves. One instance which was of service in determining the comparative ages of the bricks is worthy of mention. A horizontal drain,

about twenty centimeters in diameter, and ten in depth, and constructed of two-grooved bricks, carried the rain water from the platform over its edge. Forty centimeters beneath it was a similar drain, constructed of plano-convex bricks, which had belonged to a previous temple, while at a higher level were bricks of three grooves.

All of the platforms, and the repairs of the ziggurat thus far described, belonged to constructions later than the great plano-convex temple beneath, which represent a period several centuries previous to Sargon's time—the most flourishing period in the history of Bismya. The age of the plano-convex brick is generally placed at 4500 B. C., and the excavations at Bismya, which have revealed traces of a long dynasty of kings previous to Sargon, represented by the long, grooved bricks, confirm that date. It was not until the ruins of this temple were reached that the valuable finds which the mound yielded, began to appear.

The plano-convex temple was by far the most imposing construction at Bismya, and it appears to have been one of the most magnificent of the Babylonian temples. The greater part of the island which it covered was surrounded by a wall of unbaked bricks, four meters in thickness, and inclosing the temple quadrangle. As less than fifty centimeters of the wall remained, its height could not be determined. Within the center of this large inclosure, and upon the ruins of earlier occupations made level by the filling in of unmolded clay, was an immense square platform a meter above the surrounding ruins. Along the center of its four sides were inclined plains leading to it. Upon the platform was the temple proper, consisting of two parts of nearly equal size. The ziggurat, the base of which now rises to the average height of a meter and a half above the platform, is constructed with a casing of plano-convex bricks, and filled in with unmolded clay. Its original height could not have exceeded a few meters, and it is doubtful if it ever consisted of more than a single stage, or, at the most, of two stages. This was the prototype of the later ziggurat, which with age increased its height; the ziggurat at Ur, erected in 2800 B. C., possessed three stages; the Borsippa ziggurat was reconstructed by Nebuchadnezzar to the height of seven stages.

The other part of the temple, somewhat larger in size and of a similar construction, stood at the west corner of the ziggurat.

Its surface was entirely covered with a layer of bitumen; along the edges of its walls, and at each corner, were a number of round niches lined with bitumen; it appears that records, or objects of special value, may have been deposited in them, as were the cylinders in later Babylonian times. As the sand was cleared from the niches, nothing but a small, uninscribed fragment of a marble vase appeared in one of them. It is possible that originally chambers stood upon the platform, but, if so, their walls have entirely disappeared.

Within the temple inclosure there are still traces of the habitations and of the occupations of the people who were connected with the temple. Perhaps the most interesting, because unique, are two large chambers at the south corner of the ziggurat, one of which is oval in shape, the other square. Both are provided with pits which contained ashes to the depth of half a meter; above the pits, and projecting halfway over them, were platforms charred with the fire from a furnace from without. The oval-shaped room was originally covered with a dome; its lower bricks are still in place. These rooms undoubtedly were the crematoria of the city, and they may account for the entire absence of early Babylonian graves.

A considerable amount of pottery was employed in the temple service, and to provide it was a furnace of the usual Babylonian type, and constructed of plano-convex bricks, which was discovered at a short distance from the southwest side of the temple. Examples of the Babylonian furnace are found at all ruins; it consisted of a number of ridges constructed of bricks; the fire in the hollows between them burned the pottery which rested upon them. A number of vertical drains, consisting of large, short, circular tiles, set one upon another, and extending to the sand below, marked the site of the houses of the attendants of the temple. Upon the northwest side of the inclosure were three such drains; at the southeast side were two, and search would probably have revealed others.

It was among the ruins of this temple that inscriptions in considerable quantities were recovered. Upon the shoulder of a large white-marble statue of a king was a Sumerian inscription of three lines, revealing the name of the ancient city as UD-NUN-KI, and the name of the temple as E-shar, or possibly E-mah; both names are mentioned in the Hammurabi Code. The name of

the king, Da-udu, is undoubtedly the same as David; it not only explains the name of the biblical king as of Sumerian origin, but presents history with a new, and one of its oldest characters. Fragments of eight other marble statues, all uninscribed, forty-two inscribed fragments of marble vases, marble lamps, a bas-relief in white marble, a marble and three bronze tablets, several hundreds of marble, alabaster, onyx, porphyry, and sandstone vases, fragmentary or entire, some of which were richly carved and inlaid with stones and ivory, hundreds of terra-cotta vases, fishes and cats of ivory, marble and terra-cotta statuettes, and a number of bronze objects, are among the finds which the ruins of the plano-convex temple contained, and from which its history may be reconstructed.

A shaft sunk from almost the center of the temple hill to the undisturbed sand of the desert revealed a remarkable accumulation of débris of an occupation previous to the plano-convex brick temple. Below is a list of the various strata which appeared as the shaft was dug.

Surface.	Drifting sand.
Depth of 1 m.	Platform of bricks of Dungi, 2750 B. C.
Depth of 2.50 m.	Top of platform of plano-convex bricks, 4500 B. C.
Depth of 3.85 m.	Bottom of the platform resting upon a clay foundation.
Depth of 4.65 m.	Layer of white ashes, 17 cm. thick, resting upon an adobe wall 1.72 m. high.
Depth of 6.37 m.	Stratum in which limestone blocks appeared.
Depth of 6.57 m.	Layer of ashes resting upon a mud wall.
Depth of 8.57 m.	At this level were two large terra-cotta urns.
Depth of 9.17 m.	Layer of potsherds resting upon a layer of dirt 1.10 m. in thickness.
Depth of 10.87 m.	Small intact terra-cotta vase.
Depth of 11.97 m.	Layer of potsherds beneath an adobe wall 1.10 m. in height.
Depth of 13.20 m.	Fragments of black pottery—the earliest traces of civilization found at Bismya.